THE COLLEGE.

REPORT OF THE PRINCIPAL TO THE ANNUAL MEETING OF THE TRUSTEES, MAY 1ST, 1901.

NUMBER OF STUDENTS—SESSION 1900–1.

Undergraduates in Arts (attending)	294
General Students in Arts (attending)	35
Post Graduates " (attending)	22
Undergraduates " (extra-mural)	118
Post Graduates " (extra-mural)	10
Students in Theology	36
" Practical Science	72
" Medicine	151
	738
Registered in two Faculties	11

that is, 727, compared with 660 last year.

In last year's report it was said that "Expansion is dependent on the city voting $50,000 to erect the new building for Arts." The by-law was submitted to the people on University day (October 16) and carried by large majorities in every ward. The plans of Messrs. Symons and Rae, architects, have been approved by the Building Committee and the Finance Committee of the City Council, and tenders will be shortly invited and the building proceeded with promptly. There should be in connection with it a large Convocation and Examination Hall, and the University Council hopes that the County of Frontenac will give that as its contribution to the University. Frontenac Hall would be a noble memorial of the

public spirit of the County, which has received so many benefits from the University for sixty years.

The anticipated expansion has commenced. Additional accommodation has been secured for the Library by extending the gallery all round the room. The Medical Faculty has arranged to borrow $10,000, to add a third story to their building. The contracts have been given out, the masons and carpenters are at work, and it is intended to open the enlarged and otherwise greatly improved building on October 1 of this year. The Mining Laboratory has been extended and class-rooms for Professor De Kalb added, by means of the vote of $5,700 by the Legislature last year, and a contribution of $2,000 from Mr. James Douglas, M.A., New York. And, last month, the Legislature passed an Act, widening the basis of the School of Mining to include all branches of Applied Science, and incorporating in the Act a vote of $22,500 a year for five years, to enable the School to erect suitable buildings for engineering and allied branches of study. These buildings, as well as a central plant for lighting, heating and supplying power to them and all others on the campus, are to be proceeded with at once.

DEGREES CONFERRED.

In Medicine, M.D., C.M.	24
In Theology (Testamurs 2, B.D. 5)	7
In Practical Science (B.Sc. 3, M.E. 1)	4
In Arts (B.A. 48, M.A. 12)	60
	95

The honorary degree of LL.D. was conferred on the Right Reverend Bishop Mills, the Hon. David Mills, and P. C. McGregor, B.A. The honorary degree of D.D. was conferred on the Rev. Herbert Symonds, Rev. Francis Andrews, and the Rev. E. D. McLaren, M.A.

THE FACULTY OF ARTS.

The experiment, announced in last year's report, of appointing Rev. John Sharp tutor for one year in English and Philosophy, for the special benefit of extra-mural students in these subjects, has proved very satisfactory to the Professors concerned. They assisted to pay for his services, and so did other friends; among whom should be named Rev. Mr. Tait, Quebec; Rev. J. A. Sinclair, M.A., C. F. Hamilton, M.A.,

and S. B. Sinclair, Normal School, Ottawa. I recommend now, if in the judgment of the Trustees the revenue will bear the additional burden, that Mr. Sharp be made permanent Tutor in Philosophy; that an assistant be appointed in English; that a Professor in French, or French and Italian, be advertised for, Professor McGillivray being relieved from these subjects; and seeing the influence that the great German classical writers, from Lessing to Gœthe, have had on modern literature and philosophy, that Professor Dyde be appointed Lecturer on them to the honour students in Moderns. This will in no wise interfere with the work of the Professor of German language and literature, who will still have as much to do as any one man can do well. It seems to me important that the department of Moderns should be strengthened as much as the means at your disposal admit. The University is well manned in some departments, but we have been charged with neglecting modern languages. The reason has been lack of means, not lack of will. The financial outlook now makes an advance possible.

Independent provision should be made in the Faculty of Arts for Oriental languages. The Professor of Old Testament Exegesis iu the Faculty of Theology is, since the death of Professor Mowat, in charge of this whole department, which in Toronto has a Professor and an assistant to itself. If nothing more can be done at present, I recommend the appointment of a Fellow, to take charge of at least the Junior Hebrew class, possibly also of the Senior Hebrew, under the supervision of Dr. Jordan. Never were the departments of Oriental languages and of Old Testament Introduction and Exegesis so important as in our day. To have one Professor for the two departments is a frank confession of inadequacy of staff, for which poverty is the only excuse.

THE FACULTY OF THEOLOGY.

This Faculty has been strengthened by the addition to it of Professor McComb. Not more than half the endowment for his chair has been obtained as yet, but the need for a chair of Church History and History of Dogma was so great that the appointment was made trusting to an increase in the collec-

tions from congregations to prevent a deficit. Unfortunately, instead of an increase there has been a decrease, in this source of revenue, to the extent of between three and four hundred dollars, but as the decrease was in all probability caused by the special exertions made by the Church to raise the Century Fund, I confidently look for a steady increase hereafter. If this hope is not realized, something must be done to equalize revenue and expenditure in this Faculty, to which it has been determined to give special and independent incorporation, with its own funds, name, treasurer and constitution. The contribution expected from the Century Fund will not do more than meet the loss of $2,200 a year hitherto received from the Temporalities Fund, even if it does that much. At present there are no prospects of establishing a chair of Old Testament Theology. The addition to the Faculty of Professors Jordan and McComb has enabled us to begin honour work in several departments; to reorganize the course for the degree of B.D. in a manner more in accord with modern methods; and to begin a class—open to citizens generally as well as to students—for the intelligent reading of the Holy Scriptures in English.

PRACTICAL SCIENCE FACULTY.

The Dean's report, herewith presented, gives all needed information. The extension of the Mining School, to cover other branches of Practical Science, by the Public Act passed by the Legislature last winter, and the increased grants to the School, will enable the Governors to carry out all his suggestions, and also to add to the staff, especially in Physics and Engineering. I recommend that a statute be passed, constituting the staff and examiners of this affiliated School the Faculty of Practical Science and Engineering of the University; that the courses and examinations of the School leading to diplomas or degrees be the curriculum and examinations of the University in the said Faculty; and that no liability shall be incurred by the University for the support or maintenance of the Faculty thus established.

MEDICAL FACULTY.

The increase in this Faculty is likely to continue, and the Professors have acted wisely in providing for increased accommo-

dation and better provision for reading room, library, museum, laboratories and anatomical work and other conveniences for the best class of students. Dr. Fife Fowler, Dean of the Faculty and Professor of Practice of Medicine, resigned his chair at the beginning of the session, and the Faculty asked his assistant, Dr. Third, to do his work until the Nominating Committee could meet and suggest an appointment to the Board of Trustees. Dr. Third discharged the duties of the chair in the most satisfactory manner until stricken down by sudden illness, from which he has not recovered. The Nominating Committee has therefore not yet been called together.

The Faculty decided to institute a "Dean's Scholarship" in honour of Dr. Fife Fowler's long and faithful services, and unanimously requested him to continue acting as Dean. They contributed over $300 towards the Scholarship, and graduates and friends have added between $400 and $500 more. The names of contributors appear in the Calendar of the Faculty for the year.

In view of the probable increase of students, the Faculty has appointed four Demonstrators of Anatomy for next session, so that at least one may be present at any hour of the day, and and work be carried on continuously.

THE GYMNASIUM.

The Committee report the following list of subscriptions for new building:—

W. F. Nickle	Kingston	$250 00
G. M. Grant	"	250 00
L. J. Day	"	200 00
G. Y. Chown	"	100 00
W. L. Grant	U. C. College, Toronto	100 00
A. B. Cunningham	Kingston	50 00
N. R. Carmichael	"	50 00
E. R. Peacock	Toronto	50 00
G. & H. Richardson	Kingston	50 00
S. McComb	"	50 00
D. R. Dupuis	Pittsburg, Pa	35 00
W. G. Anglin	Kingston	25 00
J. C. Connell	"	25 00
H. A. Calvin	"	25 00
John Macnaughton	"	25 00
Isaac Wood	"	25 00
R. Crawford	"	25 00
J. A. Minnes	"	20 00
R. Uglow & Co.	"	20 00
James Redden & Co.	"	20 00
Mayor R. E. Kent	"	15 00

A. P. Chown	Kingston	15 00
J. T. Jennings	Toronto	10 00
J. J. Maclennan	"	10 00
W. W. Waldron	Kingston	10 00
R. H. Toye	"	10 00
J. M. Farrell	"	10 00
D. M. McIntyre	"	10 00
O. N. Scott	"	5 00
R. S. Minnes	Ottawa	5 00

Of this $25,000, over $2,000 are in the Treasurer's hands and bearing interest. When $5,000 are subscribed, the Committee is authorized to proceed with the erection of a Gymnasium, costing $10,000. In the meantime the students avail themselves of the excellent gymnasium of the Y.M.C.A. The foot-ball and hockey teams have still the use of the basement of the Mechanical Laboratory and its shower baths.

THE DR. WILLIAMSON MEMORIAL SCHOLARSHIP FUND.

Two Scholarships have been established from this fund; but the sum of $5,000 aimed at, when the Trustees made over to it the little estate left by the revered Professor for the general good of the University, has not yet been reached. The Treasurer's statement is as follows:—

Amounts previously acknowledged	$2,863 00
W. A. McPherson, Denver, Col., 2nd payment	10 00
W. L. Grant, Upper Canada College	250 00
	$3,123 00

CHAIR OF CHURCH HISTORY.

The following subscriptions have been received on account from 1st May, 1900:—

Mr. Hugh Waddell, Peterborough	$5,000 00
George Read, Keene	560 00
Duncan McLennan, Lancaster, bal. on 500	200 00
George Rutherford, Hamilton	200 00
Rev. John Thompson, D.D., Sarnia, bal. on 500	150 00
David McLaren, Ottawa, 4 on 500	100 00
John Mather, Ottawa, 4 on 500	100 00
G. M. Kinghorn, Montreal	100 00
H. F. McLachlin, Arnprior, 4 on 200	40 00
George Wilson, Balderson, bal. on 100	33 75

Other subscriptions of $30 and under from sundry persons, amounting to $900, were received.

Total amount at credit of this Fund, including a subscription of $5000 from Mr. R. G. Reid, Montreal, is $21,600.

FURTHER BENEFACTIONS DURING THE YEAR.

From Senator Gowan, on account, Endowment of Fellowship	$250 00
" " " for prize for good reading	20 00
" H. A. Calvin, M.P., for Latin Scholarship (4 years)	100 00

SIR JOHN A. MACDONALD CHAIR OF POLITICAL SCIENCE.

Amount of subscriptions previously received	$21,808 90
From T. G. Blackstock, Toronto	500 00
	$22,308 90

THE '01 FELLOWSHIP.

The graduating class in Arts this year decided to endow a Fellowship in connection with the class in English Language and Literature. They have subscribed over $2,000 for this purpose, and have collected from friends nearly $1,000 more, but as the Treasurer has so far received only a small portion of the amount, acknowledgment is delayed till next year.

Snbscriptions were given freely during the year for the portraits of Professors Watson and Dupuis, now adorning Convocation Hall, for the expenses connected with submission of the by-law in Kingston on October 16, and for other purposes.

The estate of the late Michael Doran has not yet been wound up, and nothing has been received since last year's report. I hope to be able to state soon what the total of this benefaction is likely to be.

LOSSES DURING THE YEAR.

The retirement of Dr. Fife Fowler from active service, and the unexpected death of the Rev. Dr. Mowat, both men long and honourably connected with the University, are our chief losses. In each case appropriate action was taken by the authorities, but I may be permitted to express my personal sense of loss in having with me no longer colleagues of such integrity, modesty and worth.

I submit the usual reports.

G. M. GRANT, *Principal.*

STATEMENT OF REVENUE AND EXPENDITURE OF QUEEN'S COLLEGE, KINGSTON, FOR THE YEAR ENDING 2ND APRIL, 1901.

Revenue.

Temporalities Board	$ 2,000 00
The Professors, Beneficiaries of the Temporalities Board	200 00
Kingston Observatory, grant from Government	500 00
Rent of Carruthers' Hall	1,250 00
Rent of Convocation Hall, &c	750 00
Rent of Lands	130 00
School of Mining for Lecturer on Mechanism	500 00
Hugh Waddell, Chair of Church History	250 00
John Roberts Allan, Chair of Botany	150 00
Fees	15,571 29

Interest on mortgages and other securities		18,756 40
General Assembly's College Fund:		
Church Agents	$2,291 02	
Congregations contribnting directly	804 00	
		3;095 02
Receipts for Scholarships		2,302 04
Interest on Jubilee Fund subscriptions		2,878 39
Balance deficiency		8,262 09
		$56,595 23

Expenditure.

Deficiency of former years	$ 8,273 58
Salaries, Professors and Lecturers in Theology	8,356 00
" Professors and Tutors in Arts	25,548 00
" Other Officers	3,382 00
Church Agent—Commission on collections for General Assembly's College Fund	60 00
Insurance	189 00
Library, Laboratories, Museum, Gymnasium, &c	3,213 91
Practical Science Department	672 69
Taxes, repairs and grounds	1,564 05
Scholarship Account	2,302 04
Advertising, printing, stationery, supplies	1,785 91
Travelling expenses	318 50
Fuel, water, gas and electricity	783 77
Medals	46 26
Contingencies	105 52
	$56,595 23

THE LIBRARY.

The following additions were received to the Library during the past year:—

Purchased	1,132	volumes.
Donated	733	"
From Binder	220	"
Total	2,085	"

Valuable donations have been made during the past year. The most valuable was the gift of 229 volumes from H. M. Stationery Office, which, with those already obtained through the late Dr. Williamson, complete the very valuable set of the Rolls Series. Some of these, such as the Records of the Privy Council, the Trial of Warren Hastings, etc., are very difficult to obtain, and the set is of importance not only to the University, but to the country.

The increase of work in the Library has made further assistance in the Library a necessity, and an assistant librarian was therefore appointed at the May session of the Board of Trustees. Much still remains to be done in the internal arrangement of the Library, but under existing circumstances, this can only be done gradually. There has hitherto been no annual stock-taking of the books required to avoid unknown losses, but it is proposed to begin to provide for this at once, on a plan similar to that adopted by McGill.

The addition of the eastern gallery has been of great benefit, but a

room is much needed for carrying on the ordinary library-work, and the librarian suggests that this be considered in making the alterations consequent on the erection of the new Arts building. Such a room might be combined with an overflow room for blue books, bound newspapers, etc., and either the present Divinity class room, or the students' reading room could be utilized for the purpose.

The followiug is an abstract of the financial statement from the auditors' report:—

Balance to credit of Library, May 1st, 1900....$	729 49
Received from Treasurer	1,976 00
Gifts, private accounts and other sources	212 63
	2,918 12
Expenditure	2,653 11
Balance .....$	265 01

LOIS SAUNDERS, *Librarian.*

THE MUSEUM.

During the past year almost nothing has been added to the Zoological and Geological collections. All donations of Minerals and Fossils are now handed over to the Scicnce Hall. A donation of $200 in Confederate notes was presented to the department of curiosities by Rev. A. B. Nicholson.

The Herbarium has been increased by the addition of 490 sheets of plants, 91 of which were presented by Rev. Robert Campbell, D.D.

Last Summer the Curator visited the Biological Laboratory, at St. Andrew's, N.B., for the purpose of collecting Algae for the Herbarium, and also for use in the Final Honour Class in Botany, but found that the number of species obtainable in that part of the Bay of Fundy, did not equal his anticipation. The rocky shores are densely covered with a few species of the common forms, but nearly all the more delicate species are wanting. This phenomenon may be accounted for by the following facts:—(1) The strong currents, caused by the great tides, sweep away every plant not firmly attached to the rocks. (2) The exposure of the plants on the rocks to the heat of the sun and winds for several hours each day during the recess of the tides, prevents the growth of all delicate forms. (3) The rushing tides stir up the waters to a great depth and thus prevent their being heated by the sun's rays. The frequent dense fogs also contribute their share to the production of this effect, so that the waters are unfit for the nourishment of Algae, common in the warmer waters of other Bays and Estuaries.

Upon discovering that only a comparatively small number of species of Algae could be obtained on the shorcs in the neighbourhood, the writer turned his attention largely to the land plants, which were abundant, and succeeded in collecting over 6,000 specimens, representing 220 genera, and 335 species, an extraordinary number for such a limited locality. A complete set of these have been mounted and placed in the Herbarium, thus greatly increasing its value. When a proper room is provided for the Herbarium, so that the students can consult it when required, its value will be much more highly appreciated.

A complete list of the species collected is published in the "Proceedings of the Natural History Association, of Mramichi," a copy of which is presented with this report. It is also published in the report of the Department of Fisheries.

The Biological Laboratory is to be removed this season to Canso, in Nova Scotia, where the conditions for collecting differ very much from those existing at St. Andrew's. Should the Board be pleased to authorize the writer to spend a part of the College vacation at the Laboratory he will very willingly do so and endeavour to secure specimens of all the marine and land plants obtainable in the neighbourhood. A suitable launch is added to the equipment this year, so that the facilities for visiting neighbouring localities is greatly increased.

As St. Andrew's is a Summer resort for wealthy visitors from the United States and the Upper Provinces of Canada, the cost of convenient accommodation is much greater than was anticipated, so that the amount voted last year failed to cover the expenses.

JAMES FOWLER, *Curator.*

BOTANY CLASSES.

Number of students in Final Honours.....	2
" " " Preliminary Honours.....	7
" " " Pass Class.....	34
Total	43

The want of a suitable laboratory for practical work rendered it necessary to divide the junior class into two and to devote a separate hour to each. Even then the accommodation was too limited, and on certain days a third hour was required to meet the wants of all.

When engaged in practical work, or learning how to perform experiments, the student requires the attention of his instructor. With a class of thirty it is impossible to devote even two minutes to each student, a period which is utterly inadequate for necessary instruction. The aid of an assistant must be secured, that desirable and efficient help may be furnished to those requiring it.

The removing of all specimens from the room at the close of every class and the returning of them at the next meeting, involves the destruction and loss of material as well as of time. A separate laboratory for each class, so that a student can leave an unfinished piece of work till his return, is absolutely necessary for the saving of time and material, and the performance of satisfactory work. Each member of the Pass Class this session studied 70 specimens, which necessitated a supply of (32x70) 2,240 specimens. The Preliminary Honour Class required 300 specimens for each, and the Final Honour Class also required a large number of Cryptogams. Friends of the College possessed of duplicate specimens, which they do not require, would confer a great favour by forwarding them to the botanical department for class use.

JAMES FOWLER, *Professor.*

PHYSICAL LABORATORY.

The greater part of the balance reported will be used up for the payment of apparatus already ordered. The apparatus has this year been enriched with Roland's photographic maps of the solar spectrum, with an X-ray tube and fluoroscope, and an ophthalmoscope, the last three of which Mr. Carmichael found particularly useful in lecturing to the medical students. We have had several pieces of apparatus made in the mechanical laboratory, particularly an Attwood's machine for gravity experiments designed by Prof. Dupuis, and an apparatus for showing my former assistant's (Mr. Baker) experiments on wave-motion, which were shown with great acceptance in Cambridge University.

There were 26 students paid fees to join the laboratory, some of whom, however, had too much to do to enable them to spend much time in the laboratory. With the improved arrangements we have a right to expect in the new building, I have not the least fear of the instruction in the physical laboratory not being as interesting and as important as any in the University. To ensure success, however, with so much work as a large physical laboratory with many students necessarily entails, it would be necessary to have an associate or assistant Professor of experimental physics, and a mechanical assistant who was handy with tools and would have the care of keeping the apparatus in order. The latter might also act as janitor to the whole building.

If the plan of heating the buildings from a central station be carried out, it will be of very great advantage in keeping dust from the apparatus, and in supplying light and electrical power will greatly facilitate the work in the laboratories..

I would also strongly advocate the appointment of a University Printer. It would be a very great boon to get the class-examination papers, instructions for the guidance of students both in their class and laboratory work, etc., printed without trouble.

Total Expenditure		$123 20
Receipts.—Balance on hand	$491 82	
Apparatus fees from Treasurer	253 00	
Interest	9 73	
For use of text-books, $3.77, less $3.12 for 3 books purchased	65	
		$ 755 20
Balance on hand		$ 632 00

D. H. MARSHALL, *Professor of Physics.*

OBSERVATORY REPORT.

The work in connection with the Observatory during the past session has been much of the usual character, although on account of unfavourable weather during a good part of the Winter it was difficult to get a sufficient number of observations to carry out fully the purposes of the work in relation to the students.

Besides, the number of students has increased so much that it has become imperative that more and better accommodation for working at astronomical problems be supplied. Accommodation is required for

fully 25 students at present, with a certainty of an increasing demand in the future.

To drop from the curriculum of Practical Science, a subject which has such an intimate relation to plane and geodetic surveying and navigation, would be to take away from the Faculty one of its most practical as well as interesting subjects.

I would suggest, therefore, that whatever disposition be made of the present Observatory, there be a class room to hold thirty or forty, well warmed and in somewhat intimate connection with the transit room. Better conditions will be thus supplied for doing the work in Astronomy which is found beneficial for students, and better provisions made for housing the valuable clocks belonging to the Observatory.

N. F. Dupuis, *Director.*

ANIMAL BIOLOGY.

The total registered attendance during the past Session was 133. Of these 37 were registered in the pass class in Arts, 11 in preliminary honours, and 2 in final honours.

The attendance in the first year class in Medicine was 40, in the second year 43.

The decrease in total attendance from last year occurred in final honours and in the pass class. The option of Animal Biology for Mathematics has not, therefore, resulted in any stampede from Junior Mathematics to Biology.

The number registered for the Eight-Months Session in Medicine was in the first year 15, and in the second year 48. Of these second year men, 11 were graduates in Medicine; 9 were third year students, and the rest belonged to our regular second year class. Quite a number of these men were not going up for the Medical Council examinations and they completed the long session simply to benefit by the review which they get of physiology.

The duplication of classes reported last year continues to be a burden in the work of instruction. For example, 72 students in Arts and Medicine attended the pass class. This is a larger number than one instructor can attend to when practical work is being done. Besides, we have not a sufficient number of microscopes, and consequently the class had to be divided into two sections, one comprising the Medical and the other the Arts students. We were thus compelled to duplicate every demonstration. The same thing had to be done in Histology, each division containing 23 students. In Practical Physiology, some of the demonstrations had to be repeated six or seven times in order to cover a class of 46. This was bad enough in itself, but when there was super-added the inconvenience of taking the apparatus from my private room and returning it after the daily demonstrations were over, the labour became excessive. However, there comes an end to all things, and the addition now being made to the Medical building will put an end to the inconvenience of having no separate room for experimental physiology.

The enlarged Medical building will also enable us to transfer the museum specimens from the present Arts building to the new Medical

museum. The importation of $150 worth of museum jars and appliances will further aid in the organization of this department, and will provide ample means for the display and study of the marine specimens obtained from St. Andrews, N.B., during the past two Summers.

I have to report the purchase of a complete set of the *Journal of Physiology*—another valuable addition to our reference library.

Professor Dupuis has again placed us under obligations for repairs to, and construction of apparatus at the University workshops.

RECEIPTS.

Balance on hand, last report	$ 6 85
Laboratory fees	300 00
Grant from Trustees	100 00
	$406 85

PAYMENTS.

Wages	$114 00
Apparatus and Equipment	189 01
Dissecting Material and Chemicals	34 30
Repairs and other expenses	64 34
Balance on hand	5 20
	$406 85

The laboratory fees for the present session amounting to $375, are still in the Treasurer's hands, but against this sum, apparatus has just been received to the amount of $250, and more will be ordered after the close of the eight months' session.

I am under deep obligations to the Trustees for the thoughtfulness which prompted the grant of $100 towards my expenses at St. Andrew's laboratory, last Summer. Toronto and McGill make similar grants to workers when they send to the Marine Station. As my department, however, is greatly in need of further equipment, the grant has been credited to the laboratory amount, as will be seen from the foregoing financial statement.

The report of my work at St. Andrew's will be included in the appendix to the annual report of the Minister of Marine and Fisheries.

A. P. KNIGHT,
The John Roberts Professor of Animal Biology.

REPORT OF DEAN OF FACULTY OF PRACTICAL SCIENCE.

There is nothing particularly new upon which to report, other than things which have already been brought under your notice in other ways. The work in the mechanical laboratories has been along the lines of previous years, and no reason is apparent for making any radical change.

The installation of a larger and better equipped blacksmith shop would be of advantage, in saving time, to both student and instructor.

In the carpentry shop several additions have been made since last year, such as re-arrangement of the wood lathes, the placing of a new lathe built in the shops, and the installation of a small circular saw, this work also being done in the shops.

The students working in the machine shop get insight into the con-

struction and working of the steam engine. In the beginning of the session we imported from New York castings of three small engines of different patterns, and during the winter one of them was finished and two others are under way. Besides this, a large working model in wood of the moving parts of the engine was constructed in the carpentry shop; and a five minutes' observation of its movements gives a better idea of the real operation of an engine than could be got from an hour's lecture.

We endeavour, as far as possible, to construct practical articles, and the pieces of apparatus built in the shops and now in use, either there or in the laboratories of the University, are worth several hundred dollars. Many of these articles are not on exhibition in the shops, being in the laboratories to which they belong.

I have thus far been fortunate in having two good mechanics as instructors, one in carpentry and one in the machine shop. As to the carpentry I do not contemplate any difficulty in the future; but I cannot say this in regard to the machine shop, as every mechanic would not be a success in that position. The only way that I know of to avoid the danger of being at some time left in the lurch is to appoint a machinist by the year. His summer months might be profitably employed in constructing pieces of apparatus for which he has no time during the winter, and in doing much necessary mechanical work about the University.

Last year I suggested the appointment of an instructor in practical mathematics for the students in practical science. The suggestion was carried out by the appointment of C. J. McInnes, M.A., Ph.D,, a recent graduate of Queen's and of Johns Hopkins. The appointment was a good one, and those students who availed themselves of the help offered by Dr. McInnes received much benefit. There are still two defects, the nature of which I wish here to lay before you:

(1) The students in practical science, especially in the mining school department, are so loaded down with work in their first year that they have not sufficient time to give to the subject of mathematics. This can be rectified only by requiring the student to matriculate with a higher mathematical standard, or to put in an extra year's attendance.

(2) It would be disastrous to allow the high standard of excellence which we have reached in mathematics to be in any way lowered. We have a reputation that must be kept up. Now, in the junior and senior classes in mathematics all students are in common, and there is no valid reason why science students should not attend along with the arts, as all are expected to take these classes who have not taken senior leaving matriculation. But in those parts of the higher mathematical course which are needed by science students the case is quite different. These subjects are compulsory upon science students, but not on arts students. Consequently none but picked students in arts, those who have a liking and a genius for the subjeet, enter upon or pursue the higher course, and it is these who go on to become our distinguished teachers.

But the presence of science students in these classes, and especially of those who do not take readily to the subject, becomes a drag on the class to the great loss and dissatisfaction of the better students. I have felt this very much during the past session. One may think that he can

go on and leave those who cannot follow to lag behind. But where there are many of such in a class such a thing is impossible. Their presence invariably disturbs and demoralizes the best interests of the class. I therefore suggest that for all mathematical subjects beyond the senior, the science students have their own classes. This can be effected by the permanent appointment of a third teacher. Mathematics is one of the heaviest departments in the University. and with the science students incorporated three men are needed for the work required. It appears to me that most of my time should be expended upon the higher students.

N. F. DUPUIS,
Dean of Practical Science Faculty.